

ABSTRACT

In a method for characterizing a culture liquid, in particular in a bioreactor, by illuminating the cells (22) contained in the culture liquid the culture liquid is analyzed *in situ*, microscopic imaging of the cells (22) and by evaluating the image. The illumination is carried out as dark-field illumination, and the image evaluation comprises a comparison of the intensities of the light output by the interior of the cell and by the edge of the cell, by means of which comparison living and dead cells (22) are distinguished in order to determine the vitality of the culture liquid.

(Figure 1)